

A Key to the Species of the Genus *Coenosia* Meigen (Dipt., Anthomyiidae).

By J. R. MALLOCH.

The species included in this key fall within the limits of the genus as restricted in several of my recent papers on the family.

Key to species.

1. Legs either entirely yellow or with only a portion of the coxae or tarsi or both blackened.....2
- Legs with at least a portion of one or more pairs of the femora, in addition to the tarsi, blackened.....17
2. Abdomen of male short and broad, segments two and three much narrowed laterally, with a large glossy black patch on apex of former and base of latter on each side; dorsum of abdomen in both sexes with central vitta and paired spots; third antennal segment black; legs usually entirely reddish yellow; anal angle of wing in male usually produced thumblike.....*ovata* Stein
- Abdomen of male not as above, segments two and three not conspicuously narrowed laterally; species not as above in other respects....3
3. Third antennal segment entirely pale yellow.....4
- Third antennal segment largely or entirely black or brown.....10
4. Head including antennae and proboscis yellow; thorax yellow, with or without a grayish or blackish dorsocentral vitta and a similarly colored mark on center of metanotum.....*modesta* Loew
- Thorax largely or entirely black, and usually at least a part of antennae or proboscis black or brown.....5
5. Abdomen unspotted, more or less broadly yellow at base in male and with dense white or pale gray pruinescence; thorax with dense white or pale gray pruinescence, entirely unmarked; antennae short, about two-thirds as long as face.....*nivea* Loew
- Abdomen with paired dorsal spots.....6
6. Antennae entirely yellow; abdomen broadly yellow at base, sometimes entirely yellow, with large, paired dorsal brown spots, fifth sternite yellow, with long slender processes at the base of the inner margins of which there are some black setulae; interfrontalia largely reddish anteriorly; hind tibia with the anterodorsal bristle very strong and of moderate length, the anteroventral one weak, situated much nearer to apex of tibia.....*antennalis* Stein
- Antennae with at least the second segment largely or entirely blackened.....7
7. Anterodorsal and preapical dorsal bristles on hind tibia excessively long and slender, usually three-fourths as long as the tibia; anterodorsal bristle on mid tibia half as long as tibia, the posterodorsal one much shorter.....*longispinosa* Malloch
- Anterodorsal and preapical dorsal bristles on hind tibia not half as long as tibia, or the anterodorsal bristle on mid tibia is shorter than the posterodorsal one.....8

8. Large species, 4.5 to 5 mm. in length; arista with distinct but short hairs; thorax opaque gray, not vittate; base of abdomen narrowly yellow, the dorsum with three pairs of black spots *compressa* Stein
 — Smaller species, averaging 2.5 mm. in length; arista almost bare, the pubescence visible only under a high-power lens; abdomen either broadly yellow at base or entirely blackish gray.....9
9. Dorsum of thorax opaque gray, with three poorly defined brown lines, one in center and the others along the line of dorsocentrals; base of abdomen broadly yellow, the dorsum with four pairs of black spots: mid and hind femora each with a short posteroventral bristle; longest bristle on hind tibia not one-fourth as long as tibia,
frisoni Malloch
 — Dorsum of thorax distinctly shining, blackish; base of abdomen not yellow, dorsum with three pairs of black spots; mid and hind femora each with a very long median posteroventral bristle; longest bristle on hind tibia about one-third as long as tibia,
oregonensis Malloch
 — Dorsum of thorax opaque gray, not vittate; abdomen not yellow at base, with two pairs of distinct dorsal spots, one on the third and the other on the fourth tergite; mid and hind femora each with a very fine median posteroventral bristle, the one on hind femur very long; hind tibia with the bristles very slender, the anterodorsal one over half as long as the tibia.....*argenticeps* Malloch
10. Antennae entirely black; mid tibia with an anterodorsal and a posterodorsal bristle11
 — Antennae partly reddish or yellowish; mid tibia with only the posterodorsal bristle14
11. Scutellum with the apical pair of marginal bristles absent or minute, the basal pair very long and strong; abdomen yellowish brown, without paired dorsal spots.....*dichaeta* Malloch
 — Scutellum with two pairs of strong marginal bristles.....12
12. Large species, averaging 5 mm. in length or over; pruinescence of body brownish yellow; tarsi not longer than tibiae; hind femur with some very strong bristles on basal half of posteroventral surface; abdomen without dorsal spots or with a very poorly defined pair on fourth tergite*flavifrons* Stein
 — Smaller species, not exceeding 3 mm. in length; pruinescence of body either whitish or bluish gray; hind femur without strong bristles on posteroventral surface; abdomen with the dorsal spots fused, so that the surface presents the appearance of having a broad brownish-black dorsal vitta, or a narrowly divided pair of vittae13
13. Thorax and abdomen with whitish pruinescence; hind femur with very long anteroventral bristles; hind tibia with the anterodorsal and preapical dorsal bristles over half as long as tibia,
setigera Malloch

- Thorax and abdomen with bluish gray pruinescence; hind femur with short weak anteroventral bristles; hind tibia with the anterodorsal and preapical bristles about one-fourth as long as tibia,
dorsovittata Malloch
14. Hind tibia with one or two short posterodorsal setulae at middle; propleural bristles very short and stout, the anterior one very conspicuously so; lower stigmatal bristle weak or absent,
laricata Malloch
- Hind tibia without posterodorsal setulae; propleura with a long, slender bristle and a fine anterior hair.....15
15. Abdomen yellow, at least at base; basal two antennal segments and palpi yellow; thorax densely white pruinescent; antennae but little shorter than face*nudiseta* Stein
- Abdomen entirely black; basal two antennal segments and palpi largely or entirely black.....16
16. Larger species, about 5 mm. in length; processes of fifth abdominal sternite much longer than broad, armed with a few long bristles and numerous long hairs; bristles on posteroventral surfaces of mid and hind femora very long and strong, extending from base to apex, but very widely spaced; basal segment of mid and hind tarsi not one-third as long as tibia.....*johnsoni* Malloch
- Smaller species, averaging about 3 mm. in length; processes of fifth sternite but little longer than broad, their surfaces with a few setulose hairs; bristles on posteroventral surfaces of mid and hind femora short and weak, confined to basal half; basal segment of mid and hind tarsi more than one-third as long as tibia,
flavicoxa Stein
17. Wings very noticeably brownish except at bases; legs very long and slender, gradually darkened from near base of femora apicad, the tibiae and tarsi usually almost entirely black or brownish black; thorax and abdomen densely white pruinescent, without markings. 18
- Wings clear; legs not colored as above, either the femora with clearly limited black markings apically or entirely black, or the tibiae are pale, or the entire legs are black except the knees; if the thorax and abdomen are white pruinescent the latter has distinct paired dorsal spots except in *impunctata*.....19
18. Frons but little longer than broad, densely silvery pruinescent; orbits not clearly defined, the bristles except the anterior pair very weak, sometimes absent; basal scutellar bristles very much weaker than apical*argentata* Coquillett
- Frons about twice as long as broad, interfrontalia fuscous, orbits well defined, white pruinescent, the bristles strong; basal scutellar bristles not much weaker than apical.....*fuscifrons* Malloch
19. Third antennal segment with a sharp thornlike point on upper side at apex; fore coxae and femora largely infuscated; lower stigmatal

- bristle weak, directed ventrad; abdomen without paired dorsal spots; interfrontalia reddish anteriorly.....*denticornis* Malloch
- Third antennal segment more or less angulated at apex but not produced thornlike20
20. Lower stigmatal bristle very weak, sometimes absent, when present directed upward; fore coxae and femora entirely or almost entirely black21
- Lower stigmatal bristle directed outward and ventrad, or the legs not colored as above22
21. Male hypopygium very prominent, fifth dorsal segment very large, globose; fifth sternite with very large, exposed processes, which are arcuately emarginate on lower margins and rounded above, presenting a slightly crescentric shape; mid and hind femora in both sexes usually yellow; basal segment of hind tarsi not one-third as long as their tibiae*hypopygialis* Stein
- Hypopygium moderately prominent; fifth dorsal segment subequal in length to basal segment of hypopygium; fifth sternite with large processes which are almost straight on their inner or lower margins; mid and hind femora usually yellow; basal segment of hind tarsus a little over one-third as long as hind tibia,
errans n. n. (*steinii* Johnson nec Verrall)
- Hypopygium very small, hardly protruded, fifth sternite with very short processes; mid and hind femora conspicuously blackened at apices; basal segment of mid and hind tarsi at least one-third as long as their tibiae.....*lata* Walker
22. Fore coxae largely or entirely, mid and hind femora entirely yellow23
- Fore coxae and all femora largely or entirely black.....25
- Fore coxae yellow, all femora with a black or brownish mark above near apices; abdomen unspotted; antennae and palpi black; thorax and abdomen with pale gray pruinescence....*impunctata* Malloch
23. Male with a bare glossy black area on each side of abdomen at apex of first segment; abdomen in both sexes with an interrupted central vitta and paired spots on dorsum black.....*ovata* Stein
- Male without a bare glossy area on each side of abdomen; abdomen in both sexes with only paired dorsal spots.....24
24. Antennae short, extending but little below middle of face, upper apical angle of third segment blunt; abdomen in both sexes with very distinct paired dorsal spots.....*flavicoxa* Stein
- Antennae clongate, extending over four-fifths of the distance to mouth-margin, upper apical angle of third segment very acute; abdomen in both sexes with very indistinct paired dorsal spots,
pallipes Stein
25. Hind tibia with two or three median anterodorsal bristles,
aliena Malloch
- Hind tibia with only one anterodorsal bristle.....26

26. Fore tarsi yellow, last segment black; hind tibiae largely black,
nigricoxa Stein
 — Fore tarsi black27
27. Third antennal segment in male very broad; abdomen in both sexes with an interrupted central vitta and paired spots on dorsum; anterior mid tibial bristle much nearer to apex of tibia than is the posterior one; apex of fourth wing-vein much basad of apex of third*rufitibia* Stein (*tibialis* Stein)
 — Third antennal segment of male narrow; abdomen in both sexes with or without paired dorsal spots and without central vitta; anterior bristle on mid tibia almost at same distance from apex as the posterior one; apices of third and fourth veins in vertical line or almost so28
28. Lower calyptra barely larger than upper; hind tibia with a median posterodorsal bristle; legs black, bases of tibiae narrowly red,
Hoplogaster californiensis Malloch
 — Lower calyptra at least twice as large as upper; hind tibia without median posterodorsal bristle29
29. Large species, 3.5 to 4.5 mm. in length; tibiae entirely reddish yellow; processes of fifth abdominal sternite of male longer than their basal width*alticola* Malloch
 — Smaller species, not over 3.5 mm. in length; tibiae pale at bases...30
30. Frons grayish pruinulent, the interfrontalia when seen from in front grayish, when seen from behind less distinctly so; processes of fifth abdominal sternite of male not longer than their basal width*fraterna* Malloch
 — Frons not grayish pruinulent, the interfrontalia when seen from in front brownish, from behind velvety black....*anthracina* Malloch

My species *Coenosia cilicauda* belongs to *Macrocoenosia*.

Professor P. Stein has published (1920) a large paper on North American Anthomyiidae in which he has described several species of this genus, but I am unable to locate with certainty any of his valid species except *nigricoxa* in my key. Several of the species he describes as new are synonyms of previously described species. His *argenticolor* is *argentata* Coquillett, *pallida* is evidently *modesta* Loew, and *albibasis* is *nivea* Loew. In his notes under *argenticolor* he mentions a variant which is *fuscifrons* Malloch, and under *pilosissima* Stein he mentions another which is *oregonensis* Malloch. His *pilosissima* is my *longispinosa*, but I have no exact data as to the publication and distribution of his paper, so cannot decide which name will fall. There are one or two other synonyms involved.